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ABSTRACT

This study examines teacher collaboration as an evolving service option for special needs students, and investigated the effects of teacher collaboration through the use of action research. The study compared student performance indicators in collaborative and noncollaborative structures and evaluated the validity of variables selected for comparison. A collaboration/consultation model was incorporated into the daily instruction of approximately 56 percent of the student subjects, which included 423 students in grades 3 through 5. Results indicated that: (1) the relative average absence per student was higher for collaborative students at each grade level and for all levels combined; (2) over 45 percent of all collaborative students received conduct notices during the school year, compared to over 39 percent of noncollaborative students; (3) percentages of collaborative students in each of the three grades with at least one failing subject were 10 percent or below, while percentages of noncollaborative students failing at least one subject ranged from 16 to 23 percent. Across all grading periods and grade levels except one (first marking period of third grade), a smaller percentage of collaborative than noncollaborative students received failing grades. (Contains 20 references.) (JDD)

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ED 360 798

Effects of Collaborative vs Noncollaborative Structures On the Learning and Adjustment of Elementary School Students

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Running Head: COLLABORATION

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Effects of Collaborative vs Noncollaborative Structures
On the Learning and Adjustment of Elementary School Students

Over the past several decades, social, political, and economic forces have converged to alter significantly public education. One of the most notable developments, Public Law 94-142, was intended to ensure a free and appropriate education to students with disabilities--to the maximum extent possible--alongside students without disabilities. As a result of the steady movement of students with disabilities into regular classrooms, over 4.5 million special education students now receive instruction in regular classroom settings (Gable & Hendrickson, 1993).

Evolving service options for special needs students represent one change that is having an impact on our schools. Another is the demographic shift toward increased racial and ethnic diversity. If current projections hold, by the year 2000 at least 25 percent of our total population will be comprised of individuals of a non-European heritage (Hodgkinson, 1991). In addition, the numbers of students who fail to qualify for special services but who exhibit serious learning and adjustment problems is increasing (e.g., Schrag, 1990). Together, the forces driving regular classroom placement of students with disabilities, services to students with special needs, along with the growing diversity in the school age population, are redefining public education in America.

Prompted largely by the changes in our schools, educators and lay persons alike have advanced an ambitious reform agenda. Of the many reform initiatives, teacher collaboration in the schools has

emerged as a contemporary zeitgeist (Friend & Cook, 1992). A number of arrangements have been identified under the rubric of teacher collaboration: collaborative consultation, intervention assistance, child study/resource teams, and behavioral consultation (e.g., Friend & Cook, 1990; Graden, Casey, & Christenson, 1985; Pugach & Johnson, 1988). Some forms of collaboration/consultation boast a more substantial research base than others--teacher assistance teams (e.g., Chalfant & Pysh, 1989) and behavioral consultation (Polsgrove & McNeil, 1989). Still, the bulk of the accumulated literature on teacher collaboration is descriptive in nature--focusing on technical or procedural aspects of the collaborative process (Rosenfield, 1991). Even with the immense popularity of teacher collaboration, only a modest amount of empirical evidence has accumulated to support it (e.g., Medway & Updyke, 1985).

The dearth of rigorous empirical support is not unique to collaboration; rather, it is pervasive throughout public education (Fuchs & Fuchs, 1990). Numerous reasons have been cited for the absence of quality research in education: lack of funding, too much emphasis on isolated variables, the use of narrow data sources and ineffectual measures, among others (e.g., Fuchs & Fuchs, 1990). Nevertheless, professionals acknowledge the need to conduct rigorous, ongoing examination of curricula and professional practices (McKernan, 1988) and to produce empirically-based educational programs (Gable & Warren, 1993).

In the present study, we sought to examine the effects of teacher collaboration through the use of Lewin's (1946) model of action research which relies on: (a) analysis, (b) fact-finding, (c) planning, and (d) evaluation of practitioner-identified problems (McKernan, 1988). Action research is conducted largely to improve day-to-day instruction and focuses on issues of immediate concern to practitioners (McKernan, 1988). The focus of our study was two-fold: to compare student performance indicators in collaborative and noncollaborative structures and second, to evaluate the validity of variables selected for comparison. We chose to examine three aspects of student performance: (a) attendance, (b) conduct, and (c) academic achievement--because they are recognized as powerful predictors that co-vary and anticipate students' later life successes (Kauffman, 1989).

Method

Subjects

The students who served as subjects for this study were taken from the student population of an urban elementary school composed only of grades three, four, and five. Students primarily came from urban and suburban, middle class residential settings. Assignments to classrooms were made according to school division policy, with consideration to a proportional balance of gender, race, and levels of student performance. The school was selected as a research site due to the principal's and faculty's request to conduct a school-based comparison of instructional programs.

The collaborative population was composed of three classes of Grade 3 (class sizes of 26, 25, and 25), three classes of Grade 4 (class sizes of 20, 28, and 27), and three classes of Grade 5 (class sizes of 29, 29, and 30). Three classes of Grade 3 (class sizes of 24, 26 and 26), two classes of Grade 4 (class sizes of 25 and 28), and two classes of Grade 5 (class sizes of 27 and 28) comprised the noncollaborative group. In all, data were collected on a total of 423 students (239 collaborative and 184 noncollaborative).

Measures of Student Performance

Attendance. Attendance records were completed on students, on the number of days absent from school from September 1992 to the end of school in June 1993. A district policy required retention of any student absent 20 or more days during the school year. An eight day standard was selected as a "problem indicator" in that it posed a significant instructional problem and represented nearly half the total number of absences requiring retention. An average absence per student was computed using data of students accumulating eight or more absences. The total absences (8 or more) were summed and divided by the number of students in each group (collaborative or noncollaborative). The resulting figures are a relative, as opposed to an absolute absence per student, due to the imposition of the 8 absence restriction.

Behavior contacts. Data were compiled on six areas of behavior: conduct notices, warnings, letters sent to parents/guardians regarding behavior problems, detentions, ST-5

(students barred from school for behavior problems and unable to return without a parent conference), and suspensions. Raw score and percentages of behavior contacts for students (collaborative and noncollaborative) were identified for each grade separately and for the total of grades 3, 4, and 5. A percentage of students within each structure (collaborative or noncollaborative) was determined by dividing the actual number of behavior contacts per category by the actual number of students in each category (e.g., 30 conduct notices/75 collaborative fourth grade students).

Academics. The number of failing grades per marking period were computed for each subject area (reading, language, spelling, math, science, social studies). Raw scores and the percentage of failures (number of failing grades/number of students per category x 100) were identified. Two academic measures were obtained for every student. The first was the percentage of failing grades received by collaborative and noncollaborative students in each content area. The second was the percentage of students (collaborative or noncollaborative) receiving at least one failing grade. The first measure represented the actual number of failing grades per category divided by the number of students within that category. This established a percentage of failing grades per grading period for (collaborative versus noncollaborative) students. The second measure reflected the number of students failing at least one subject per grading period in collaborative and noncollaborative categories. A percentage score was computed and graphed each grading period by dividing the number of

collaborative (or noncollaborative) students failing at least one subject by the total number of collaborative (or noncollaborative) students.

Teacher Collaboration Procedures

The changes in public education are forcing a reexamination of who should be served and how those services should be provided (Cosden, 1990). A committee of general, special, and remedial teachers and administrators was established to review and report on various teacher collaborative models. Based on the committee's findings, a plan was formulated for staff development, formation of collaborative arrangements, and use of complementary instructional strategies. Cooperative teaching was identified as a desirable collaborative approach (Bauwens, Hourcade, & Friend, 1989). Fundamental to the plan was the ability to co-mingle students with special needs and their regular peers as well as to promote teamwork among general and special educators. Collaborative teachers were encouraged to apply various instructional arrangements such as cooperative learning and flow grouping of students with and without disabilities. Finally, a university consultant was secured to assist teachers in developing a program to meet the unique needs of the individual school which emphasized shared responsibility for all students.

Over the course of the 1992-1993 school year, a collaboration/consultation model was incorporated into the daily instruction of approximately 56% of the students. The primary objective of the program was to decrease problem indicators (e.g.,

failing grades, referrals for disciplinary action) among at-risk and students with disabilities in mainstream settings. An action research agenda was adopted to allow school personnel to investigate collaborative vs noncollaborative options despite the acknowledged limitations of research in applied situations (e.g., spillover effect of procedures).

Results

Attendance. As shown in Table 1, the relative average absence per student was higher for collaborative students at each grade level and for all levels combined (in comparison to percentages for noncollaborative students).

Insert Table 1 about here

Behavior contacts. The behavior contact measures (see Table 2) reveal 45.61% of all collaborative students received conduct notices during the school year, as compared to 39.67% by noncollaborative students. The percentage of noncollaborative students who received conduct notices was greater than that of collaborative students in both the third and fifth grades. In the fourth grade, the percentage of collaborative students receiving conduct notices was more than three times the percentage received by noncollaborative students (85.33% vs 26.42%). The percentages of collaborative students were higher than the respective percentages of noncollaborative students in every category (e.g., conduct notices, suspensions) in grade four. No patterns were

apparent in percentages of collaborative or noncollaborative students in grade 3, grade 5, or for all grades together.

Insert Table 2 about here

Table 3 contains percentages of collaborative and noncollaborative students receiving bus conduct notices at some time during the school year. A greater percentage of collaborative students (than noncollaborative students) received bus conduct notices in the fourth and fifth grades. The opposite was true in third grade, where noncollaborative students acquired the greater percentage of bus conduct notices.

Insert Table 3 about here

Academics. Tables 4, 5, and 6 contain the numbers of failing grades earned per grading period at each grade level by content area. The percentage of failing grades for all third grade students during the six marking periods ranged from 0.00 % to 6.58% (see Table 4). Failing grades of fourth grade, collaborative students ranged from 0.00% to 8.00% (see Table 5). The corresponding range for noncollaborative students was from 0.00% to 20.75%. Fifth grade failing grades for collaborative students ranged from 0.00% to 9.09% as compared to a range of 1.82% to 23.64% for fifth grade noncollaborative grades (see Table 6).

Insert Table 4, 5, and 6 about here

Tables 7, 8, and 9 depict students failing at least one subject during each marking period for collaborative and noncollaborative third, fourth, and fifth grade students. The percentage of students with at least one failing grade ranged from 1% to 5% for collaborative and from 1% to 9% for noncollaborative third grade students. Fourth grade collaborative students failing at least one subject ranged from 5% to 13% in contrast to 22% to 30% for noncollaborative students. The percentage of students failing at least one subject for collaborative fifth grade students ranged from 9% to 14% and from 25% to 40% for noncollaborative pupils. As a total group (see Table 10), the percentages of collaborative students with at least one failing subject were all 10% or below. The percentages of totals of noncollaborative students failing at least one subject ranged from 16% to 23%.

Insert Tables 7, 8, 9, and 10 about here

Discussion

The growing diversity in the school-aged population poses an enormous challenge to public school personnel. In school systems throughout the country, teacher collaboration is being hailed as an especially promising means of accommodating students with disabilities and special needs (Friend & Cook, 1992). The school

division in which the present study was conducted is no exception. In an attempt to better meet the challenge of a diverse population of elementary students, administrators and teachers sought to compare student performances in attendance, academics, and behavior across collaborative and noncollaborative instructional programs.

Various authors assert that poor student attendance may be related to undesirable factors (e.g., truancy, gang attachments, drug related problems) (e.g., Kauffman, 1989); also, it may be due to illness, family demands, or other circumstances beyond the students' control. At best, attendance data provides only an indirect indicator of student-related performance. In the present study, we found no significant differences in the attendance of collaborative and noncollaborative students. Furthermore, no notable differences were found between collaborative and noncollaborative students in the seven behavior contact areas, including bus deportment.

In contrast to issues of attendance and deportment, information on the percentage of students failing at least one subject was compelling. That is, across all grading periods and grade levels except one (first marking period of third grade), a smaller percentage of collaborative than noncollaborative students received failing grades. In light of the importance of academic success--its potential for positively influencing other areas (e.g., conduct, attendance) (e.g., Haring, Lovitt, Eaton, & Hansen, 1978) these results suggest that the benefits which accrue from collaborative instruction may be especially significant. Furthermore, these findings add credence to the view that students

with disabilities can be accommodated in the regular classroom, without diminishing the instruction of students without disabilities.

Although encouraging, some caution is necessary in interpreting findings of the present study. For example, the small sample sizes in collaborative and noncollaborative groups call into question reliability of the information. Another limitation is the fact that it is difficult to replicate building-level collaboration programs or to generalize findings much beyond a specific school. Finally, academic measures usually are collected by a single person, whereas, misbehavior is reported by assorted school personnel (e.g., teachers, bus drivers, cafeteria workers). For this reason, the accuracy of the conduct data is unclear, which may obscure distinctions between collaborative and noncollaborative student behavior.

On the whole, teacher collaboration is one of the most visible of the many changes taking place in our schools (Friend & Cook, 1992). Notwithstanding its tremendous popularity, empirical support for collaboration remains limited. The present study contributes to that modest body of supporting documentation in several ways. Findings on academics suggest educators as well as students may benefit from collaboration. Teachers may use data collected on academic content areas to judge the worth of one or more instructional variables (e.g., cooperative learning, peer tutoring, rate of praise) to assist in planning future programs. And, present results suggest that teacher collaboration is one variable that may be manipulated by teachers to decrease the

likelihood of student academic failure. Although our investigation alone answers few questions, we can draw from it several concluding observations:

1. Consonant with a growing body of opinion to support it, teacher collaboration appears to have a positive effect on the academic achievement of both students with and without disabilities.

2. As we have shown, action research is one way that administrators and teachers can become stakeholders in the evaluation of educational programs which is especially important in light of the popularity of site-based management.

3. Lastly, the content of preservice and inservice teacher training programs should reflect both trends in public education and equip practitioners with the ability to evaluate the impact of those trends at the building level.

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Table 1

Relative Absences for Collaborative and Noncollaborative Students

	Collaborative	Noncollaborative
Total	Avg Abs/Std	Avg Abs/Std
# Absences/ # Students	6.33	5.18
Grade 3		
# Absences/ # Students	5.67	4.99
Grade 4		
# Absences/ # Students	6.44	5.30
Grade 5		
# Absences/ # Students	6.81	5.35

Table 2

Behavior Contacts of Collaborative vs Noncollaborative Students

	Conduct Notices		Warnings		Letters	
	Col	Noncol	Col	Noncol	Col	Noncol
All Grades						
Percent	45.61	39.67	4.60	8.15	3.77	1.63
Grade 3						
Percent	11.84	25.00	0.00	7.89	1.32	2.63
Grade 4						
Percent	85.33	26.42	9.33	3.77	9.33	1.89
Grade 5						
Percent	40.91	72.73	4.55	12.73	1.14	0.00

Number = number of responses (col or noncol)/ total number of responses (col and noncol)

Ratio = number of responses (col or noncol)/ number of participants in a category

Percent = Percentage of the number of responses (col or noncol)/ number of participants in a category

Table 2 (continued)

Behavior Contacts of Collaborative vs Noncollaborative Students

	Detentions		ST-5		Suspensions	
	Col	Noncol	Col	Noncol	Col	Noncol
All Grades						
Percent	9.62	7.61	8.79	7.61	12.97	7.61
Grade 3						
Percent	3.95	2.63	5.26	3.95	7.89	3.95
Grade 4						
Percent	14.67	7.55	16.00	7.55	20.00	0.00
Grade 5						
Percent	10.23	14.55	5.68	12.73	11.36	20.00

Number = number of responses (col or noncol)/ total number of responses (col and noncol)

Ratio = number of responses (col or noncol)/ number of participants in a category

Percent = Percentage of the number of responses (col or noncol)/ number of participants in a category

Table 3

Bus Conduct Notices of Collaborative and Noncollaborative Students

	Conduct Notices	
	Col	Noncol
All Grades		
Percent	42.26	32.07
Third Grade		
Percent	15.79	27.63
Fourth Grade		
Percent	48.00	18.87
Fifth Grade		
Percent	60.23	50.91

Number = number of responses (col or noncol)/ total number of responses (col and noncol)

Ratio = number of responses (col or noncol)/ number of participants in a category

Percent = Percentage of the number of responses (col or noncol)/ number of participants in a category

Table 4

Percentage of Third Grade Collaborative and Noncollaborative Failing Grades by Grading Period

	Collaborative	Noncollaborative
	Percent	Percent
First Six Weeks		
Reading	2.63	0.00
Language	2.63	0.00
Spelling	3.95	1.32
Math	2.63	0.00
Science	2.63	0.00
Social Studies	1.32	0.00
Second Six Weeks		
Reading	0.00	1.32
Language	0.00	0.00
Spelling	1.32	1.32
Math	0.00	1.32
Science	0.00	0.00
Social Studies	0.00	1.32
Third Six Weeks		
Reading	0.00	1.32
Language	0.00	0.00
Spelling	1.32	3.95
Math	1.32	0.00
Science	0.00	5.26
Social Studies	2.63	2.63

Table 4 (continued)

Percentage of Third Grade Collaborative and Noncollaborative Failing Grades by Grading Period

	Collaborative	Noncollaborative
	Percent	Percent
	Fourth Six Weeks	
Reading	0.00	2.63
Language	0.00	0.00
Spelling	2.63	1.32
Math	1.32	0.00
Science	0.00	1.32
Social Studies	0.00	2.63
	Fifth Six Weeks	
Reading	0.00	3.95
Language	1.32	0.00
Spelling	1.32	1.32
Math	0.00	0.00
Science	0.00	6.58
Social Studies	0.00	1.32
	Sixth Six Weeks	
Reading	0.00	2.63
Language	1.32	1.32
Spelling	1.32	1.32
Math	0.00	2.63
Science	1.32	0.00
Social Studies	0.00	1.32

Table 5

Percentage of Fourth Grade Collaborative and Noncollaborative Failing Grades

	Collaborative	Noncollaborative
	First Six Weeks	
	Percent	Percent
Reading	1.33	3.77
Language	2.66	7.55
Spelling	4.00	5.66
Math	1.33	5.66
Science	1.33	9.43
Social Studies	4.00	18.87
	Second Six Weeks	
Reading	4.00	0.00
Language	1.33	3.77
Spelling	1.33	1.89
Math	4.00	15.09
Science	4.00	5.66
Social Studies	4.00	7.55
	Third Six Weeks	
Reading	5.33	7.55
Language	1.33	3.77
Spelling	0.00	3.77
Math	2.67	16.98
Science	4.00	9.26
Social Studies	6.67	11.32

Table 5 (continued)

Percentage of Fourth Grade Collaborative and Noncollaborative Failing Grades

	Collaborative	Noncollaborative
	Fourth Six Weeks	
	Percent	Percent
Reading	6.67	5.66
Language	1.33	9.43
Spelling	0.00	5.66
Math	1.33	11.32
Science	5.33	7.55
Social Studies	2.67	16.98
	Fifth Six Weeks	
Reading	1.33	7.55
Language	2.67	9.43
Spelling	1.33	5.66
Math	8.00	18.87
Science	2.67	13.21
Social Studies	5.33	20.75
	Sixth Six Weeks	
Reading	2.67	9.43
Language	1.33	7.55
Spelling	0.00	3.77
Math	1.33	15.09
Science	0.00	9.43
Social Studies	0.00	13.21

Table 6

Percentage of Fifth Grade Collaborative and Noncollaborative Failing Grades

	Collaborative	Noncollaborative
	First Six Weeks	
	Percent	Percent
Reading	3.41	7.27
Language	2.27	5.45
Spelling	7.95	10.91
Math	0.00	9.09
Science	2.27	14.55
Social Studies	2.27	16.36
	Second Six Weeks	
Reading	2.27	7.27
Language	1.14	3.64
Spelling	5.68	10.91
Math	0.00	3.64
Science	2.27	9.09
Social Studies	2.27	1.82
	Third Six Weeks	
Reading	5.68	7.27
Language	0.00	7.27
Spelling	1.14	10.91
Math	2.27	18.18
Science	0.00	12.73
Social Studies	3.41	23.64

Table 6 (continued)

Percentage of Fifth Grade Collaborative and Noncollaborative Failing Grades

	Collaborative	Noncollaborative
	Fourth Six Weeks	
	Percent	Percent
Reading	3.41	9.09
Language	1.14	1.82
Spelling	3.41	9.09
Math	5.68	18.18
Science	4.55	14.55
Social Studies	9.09	12.73
	Fifth Six Weeks	
Reading	1.14	7.27
Language	0.00	7.27
Spelling	1.14	9.09
Math	2.27	10.91
Science	0.00	3.64
Social Studies	5.68	12.73
	Sixth Six Weeks	
Reading	1.14	5.45
Language	0.00	1.82
Spelling	2.27	18.18
Math	1.14	7.27
Science	1.14	10.91
Social Studies	3.41	18.18

Table 7

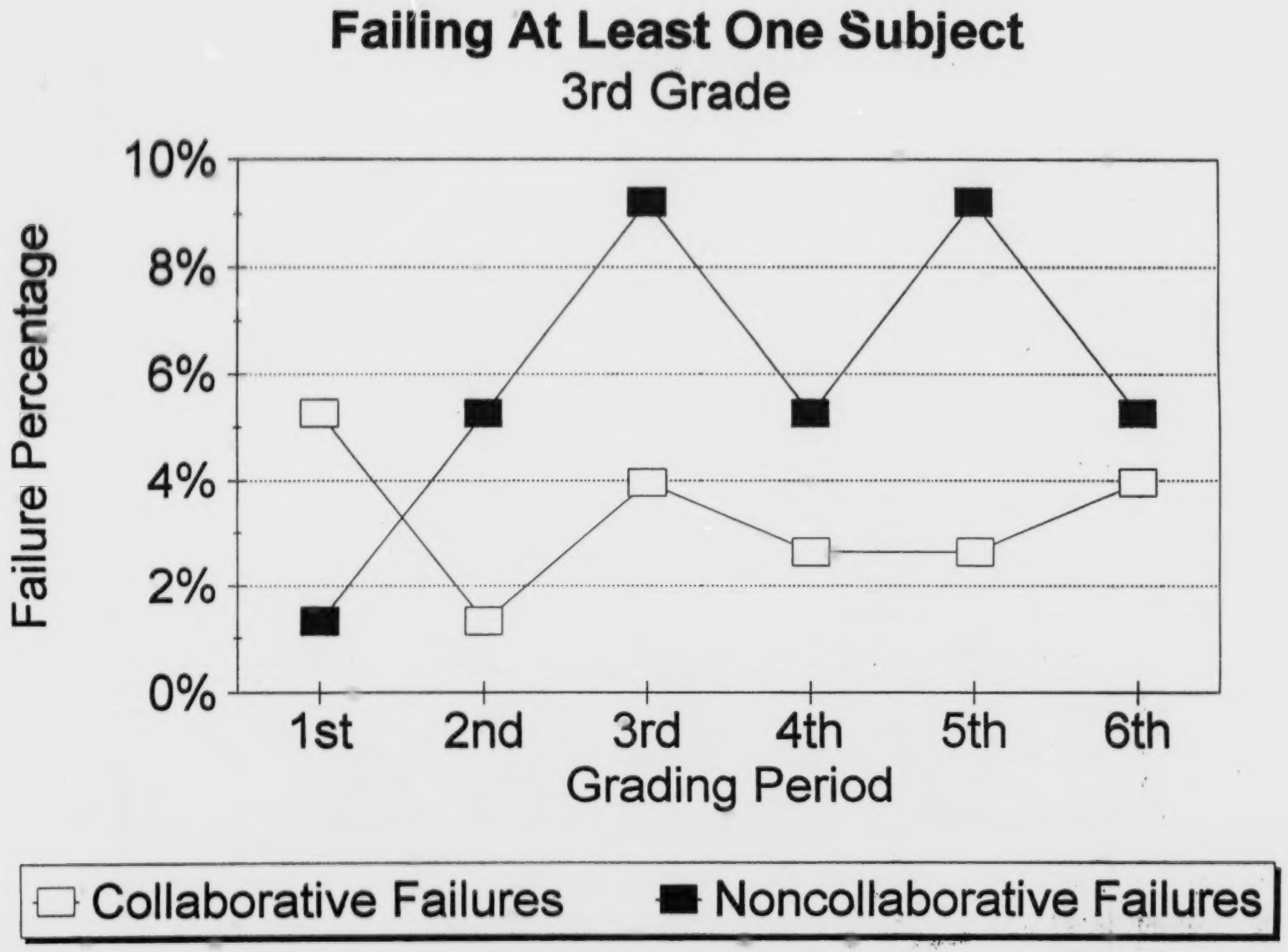

Failing At Least One Subject
3rd Grade
Failure Percentage
10%
8%
6%
4%
2%
0%
1st
2nd
3rd
4th
5th
6th
Grading Period
Collaborative Failures
Noncollaborative Failures

Table 8

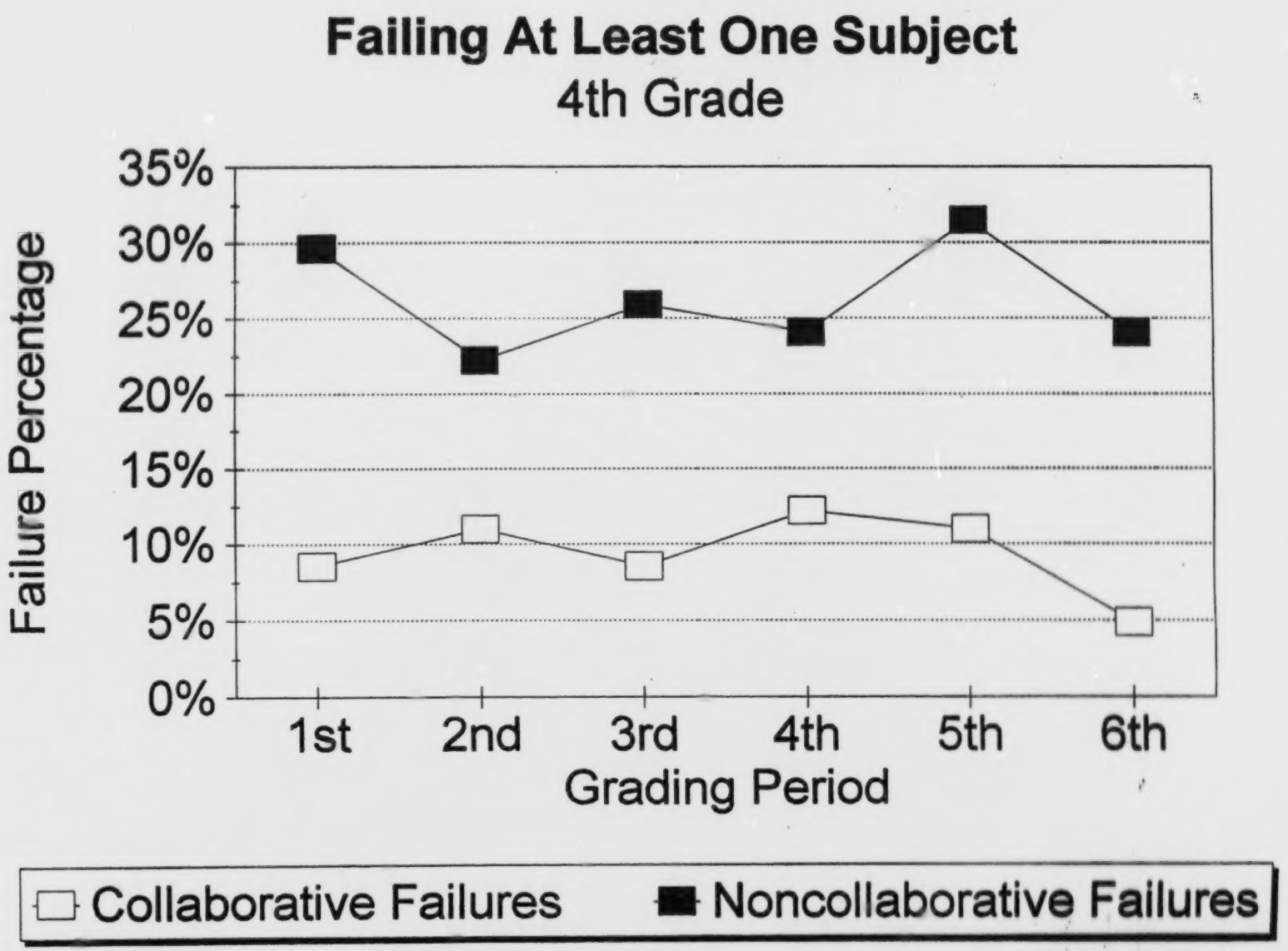

Failing At Least One Subject
4th Grade
Failure Percentage
35%
30%
25%
20%
15%
10%
5%
0%
1st
2nd
3rd
4th
5th
6th
Grading Period
Collaborative Failures
Noncollaborative Failures

Table 9

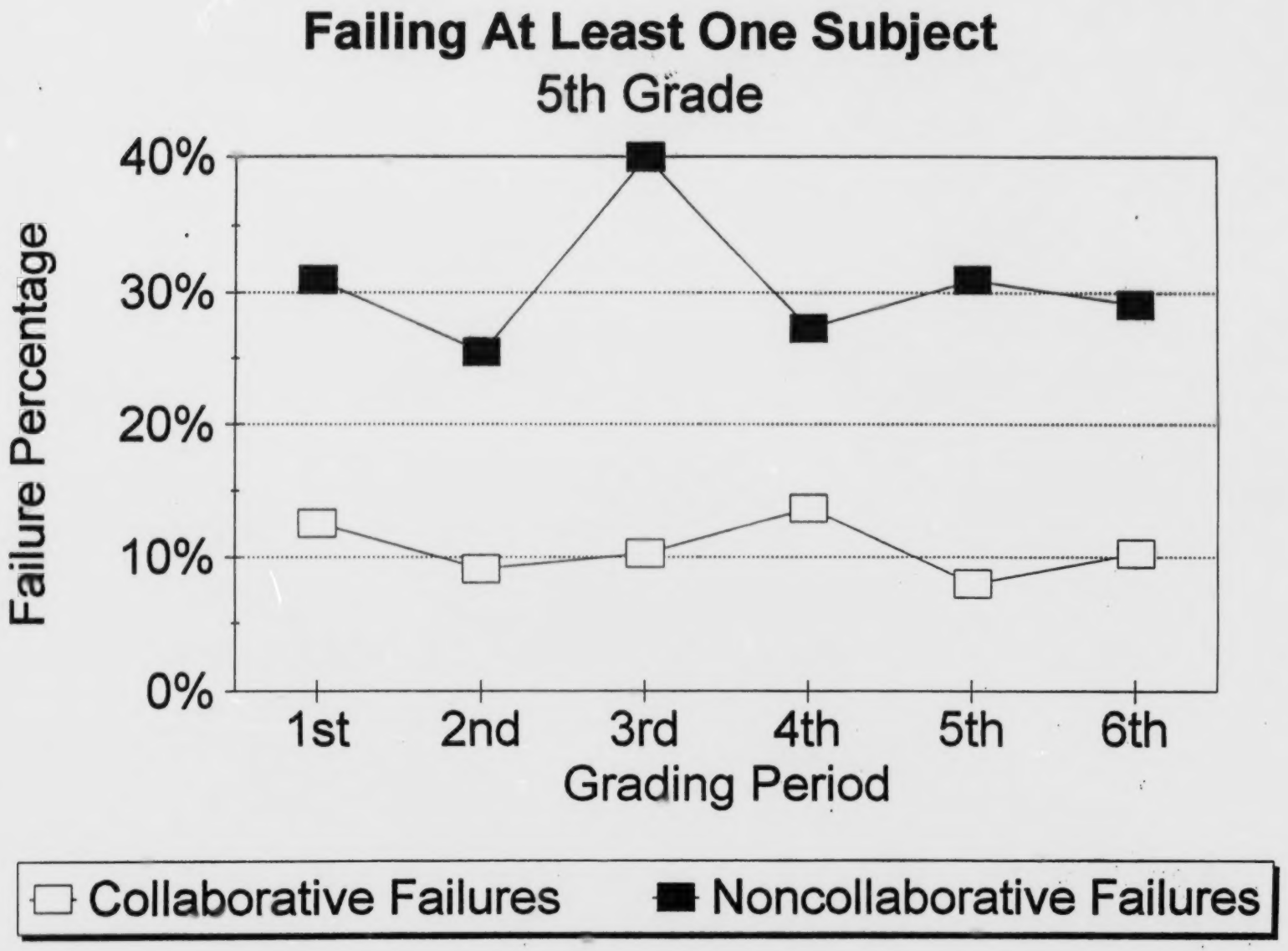
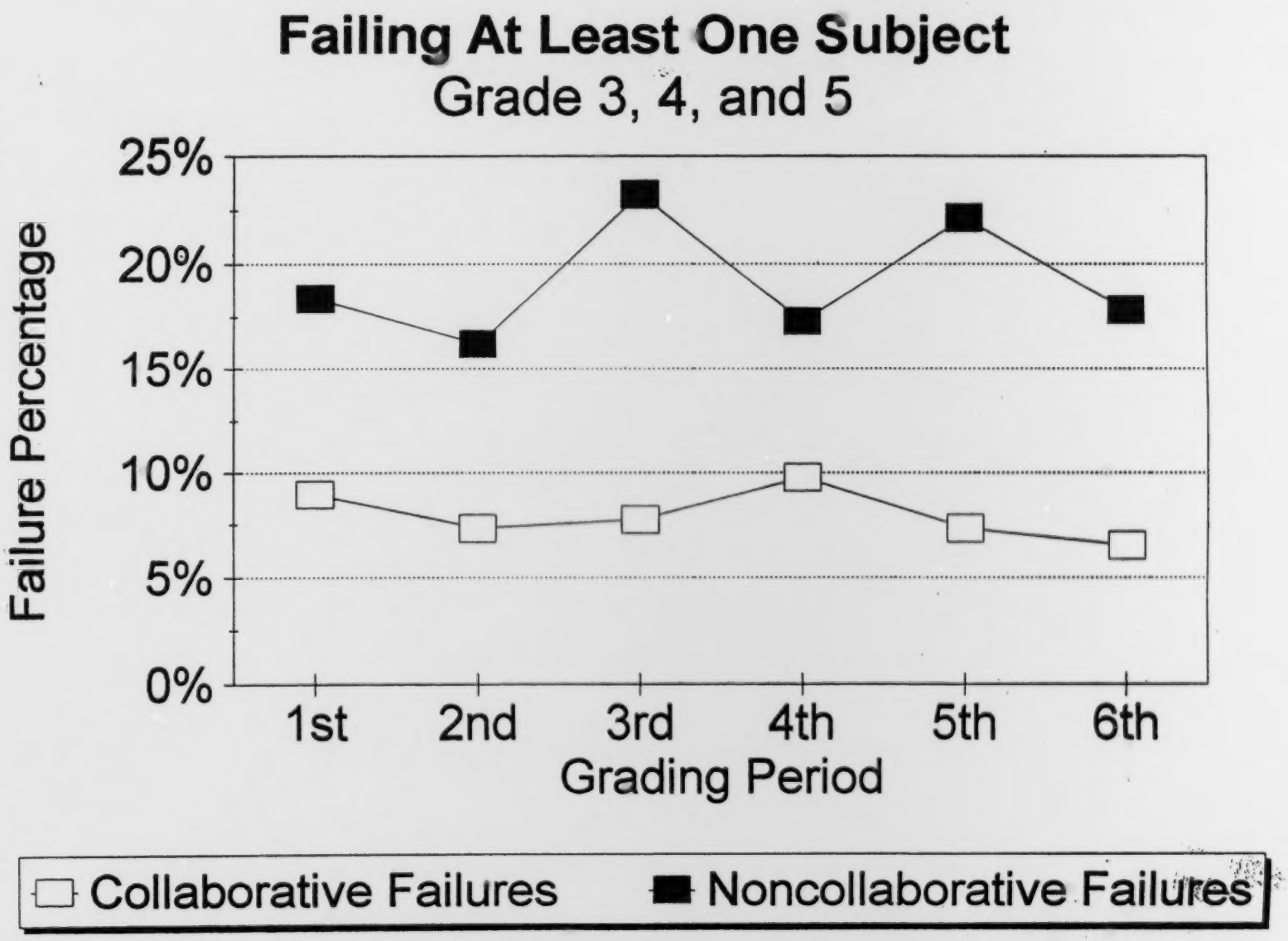

Failing At Least One Subject
5th Grade
Failure Percentage
40%
30%
20%
10%
0%
1st
2nd
3rd
4th
5th
6th
Grading Period
Collaborative Failures
Noncollaborative Failures

Table 10


Failing At Least One Subject
Grade 3, 4, and 5
Failure Percentage
25%
20%
15%
10%
5%
0%
1st
2nd
3rd
4th
5th
6th
Grading Period
Collaborative Failures
Noncollaborative Failures